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16 September 1969

MEMORANDUM FOR THE RECORD

SUBJECT : Bayesian Processing of Intelligence Information

25X1 1. On 4 September 1969, at the annual convention of the American Psychological Association (APA), the Society of Engineering Psychologists (a division of APA) held a symposium on "Decision Theory and Man-Machine System Design." Highlight of the session was an address on "Bayesian Processing of Intelligence Information"

25X1 2. [] discussed the attractiveness of Bayesian processing to CIA for helping alleviate the inconclusive nature of foreign affairs analysis. He emphasized that the power given an analyst via Bayes' Theorem enables him to make probability decisions, value judgments, and payoff assessments as early in a dynamic situation as possible, without the burden of subsequent, complicating events.

25X1 3. [] main theme, however, was the distance remaining before Bayesian processing can be implemented by the intelligence community to reduce analytic inconclusiveness. Bayesian theorists, he urged, should more specifically consider several critical aspects of foreign affairs analysis if their research findings are ever to be applied effectively. First among these important characteristics are the time lapses inherent in international developments. In the face of changing evidence, the analyst must be capable of reprocessing old information to reach new conclusions.

4. A second phenomenon of great concern is what [] called "the reversal of cause/effect hypotheses" in foreign affairs occurrences. The impact on Soviet policy of such actions as JFK's statement to the USSR on the "grave consequences" of offensive missiles being installed in Cuba must be assessed carefully. The analyst must be able to sort out US intentions from actual consequences, and make his intelligence judgment accordingly.

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25X1 5. [] emphasized a third significant area requiring consideration, that of the "catch-all hypothesis." Pieces of evidence ideally should be individually appraised by the analyst to avoid pre-disposition toward a past conception. Unfortunately, however, such total impartiality is a virtual impossibility in human reasoning. Newly received information does not work for the analyst as well as it theoretically might in an ideal, non-prejudicial environment.

25X1 (6. Parenthetically, it should be said that the Agency is currently experimenting with Bayesian modeling of the Sino-Soviet border situation. [] before he left the DDI, was primarily responsible for this program. It is being continued under the supervision of the Systems Development Staff of the Office of Economic Research, where [] 25X1 [] is the project officer.) 25X1

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